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Operations and Services
MARINE AND COASTAL WEATHER SERVICE PROGRAM, NWSPD 10-3

COASTAL MARINE FORECAST SERVICES

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SUMMARY OF REVISIONS: This directive supersedes NWSI 10-310, dated July 8, 2003. This directive includes expanded guidance on the issuance of the following products: Surf Zone Forecast; Small Craft Advisory, Gale Warning, Storm Warning, and Hurricane Force Wind Warning. Per agreement from the National Marine Program Managers meeting in 2003, and in accordance with NWSI 10-1702, Universal Geographic Code, the format of the Synopsis has been adjusted. Headlining a Coastal Flood Watch/Warning or High Surf Advisory product is no longer permitted in the Coastal Waters Forecast (CWF). This directive also provides guidelines to the occurrence of "frequent gusts", and includes updated examples in the Appendix.

Signed July 2, 2004

Gregory A. Mandt Date
Director, Office of Climate,
Water, and Weather Services

COASTAL MARINE FORECAST SERVICES

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1. Introduction. This procedural instruction provides product specifications for the main alphanumeric coastal weather products issued by the National Weather Service (NWS) Weather Forecast Offices (WFOs).

2. Coastal Waters Forecast (product category CWF).

2.1 Mission Connection. The Coastal Waters Forecast is a text product issued by all coastal WFOs to explicitly state expected weather conditions within their marine forecast area of responsibility through Day 5. The CWF is used by a wide variety of marine customers and partners such as the media, emergency managers, and the general public. It is primarily used as a tool for planning purposes to support and promote safe transportation across the coastal waters.

2.2 Issuance Guidelines.

2.2.1 Creation Software. WFOs will produce the CWF using software formatters (IFPS/GFE) requiring little or no post-editing.

2.2.2 Issuance Criteria. The CWF will be issued twice a day with updates as necessary. Regions, as dictated by customer requirements, may require scheduled updates.

2.2.3 Issuance Time. Coastal Waters Forecasts are routinely-scheduled products. Forecasters should make the CWF available to customers by the scheduled issuance time, but no earlier than 1 hour before this issuance time. In the communications header, list the issuance time in Coordinated Universal Time (UTC), but in the mass media header, list the valid time in local time. WFOs should issue Coastal Waters Forecasts based on the following:

Region/Office		Scheduled Issuance Time (UTC)	
Eastern	(Standard/Daylight)	0830/0730	2030/1930
Southern	(EST/CST)	0930/0930	2130/2130
	(EDT/CDT)	0830/0930	2030/2130
WFO San Juan		0830	2030
Western	(Standard/Daylight)	1100/1000	2300/2200
Alaska	(Standard/Daylight)	1300/1200	0100/0000
WFO Honolulu		0400	1600
		1000	2200
WFO Guam	(Marianas/Guam)	0700	1900
WFO Guam	(Micronesia)	0600	1800

In all forecasts, include forecast periods as shown below. Use the day of the week to describe forecast periods for all but the current day. For example, a forecast issued Sunday evening will include: TONIGHT, MONDAY, MONDAY NIGHT, TUESDAY, TUESDAY NIGHT, WEDNESDAY, THURSDAY, and FRIDAY. Due to broadcast limitations on text product length (e.g., USCG marine radio, NAVTEX, etc.), forecast periods of the CWF are shown below:

The early morning forecast will cover:

Today	(Issuance time to 6PM)
Tonight	(6PM to 6AM)
Day 2	(6AM to 6PM)
Day 2 Night	(6PM to 6AM)
Day 3	(6AM to 6AM)
Day 3 Night (Optional)	(6PM to 6AM)
Day 4	(6AM to 6AM)
Day 5	(6AM to 6AM)

The late afternoon forecast will cover:

Tonight	(Issuance time to 6AM)
Tomorrow	(6AM to 6PM)
Tomorrow Night	(6PM to 6AM)
Day 2	(6AM to 6PM)
Day 2 Night	(6PM to 6AM)
Day 3	(6AM to 6AM)
Day 3 Night (Optional)	(6PM to 6AM)
Day 4	(6AM to 6AM)
Day 5	(6AM to 6AM)

2.2.4 Valid Time. Coastal Waters Forecasts are valid from the time of issuance until the expiration time.

2.2.5 Universal Geographic Code (UGC). Coastal Waters Forecasts will contain marine-based, areal UGC codes

2.2.6 Product Expiration Time. The CWF product expiration time is not more than 12 hours from the initial issuance.

2.3 Technical Description. Coastal Waters Forecasts will follow the format and content described in this section.

2.3.1 Mass News Disseminator Broadcast Line. None.

2.3.2 Mass News Disseminator Header. The Coastal Waters Forecast MND Header is "COASTAL WATERS FORECAST".

2.3.3 Content. Follow the format for the CWF as shown in section 2.4. In each marine zone, include all required forecast periods and forecast parameters. Forecasters may subdivide areas (e.g., NORTHERN HALF, SOUTHERN HALF; WATERS WITHIN 5 NM OF SHORE, OPEN WATERS; etc.) to describe significant differences. If geographical reference points are used in the subdivision, forecasters should ensure they are well known.

Forecasters should combine marine zones for which they are responsible if conditions are expected to be homogeneous. However, do not combine one marine zone with just a part of another.

Forecasters should list applicable National Marine Sanctuaries, as noted in NWSI 10-302, in the appropriate CWF.

The forecaster may combine forecast periods (beyond the first period) if, in the forecaster's opinion, the weather elements in each are consistent. Also, the forecaster may subdivide the first period of the forecast to account for rapid weather changes.

2.3.4 Synopsis. The synopsis for the CWF should be a concise, understandable description of surface weather features that may cause significant winds and seas over the forecast area during the forecast period. At a minimum, it should identify the strength, trend and movement of each major weather system affecting the area. The synopsis is broadcast over the marine radio, and therefore, it should contain complete and grammatically correct sentences. All synopses will be meteorologically consistent with other products issued by the WFO.

When ash fall from a volcanic eruption is expected to affect marine areas, a brief statement will be included in the synopsis. For example: "WESTDAHL VOLCANO, 70 NM SOUTHWEST OF COLD BAY, IS CURRENTLY ACTIVE."

If a hurricane or tropical storm is expected to impact the forecast area, WFOs should include in the synopsis appropriate identification of the tropical cyclone, its last location (local time), and the direction and speed of movement. Give the location as distance (nautical miles) and direction (16-point compass) from a known landmark or breakpoint. The forecaster may use generic terms if a tropical cyclone is expected to develop in later periods of the forecast.

2.3.5 Headlines. Use headlines to emphasize weather events likely to have a significant impact on mariners or marine operations. In each headline, indicate the severity of the event in the priority order given below.

The most significant headline generally should stand alone. However, forecasters may use more than one headline to indicate multiple threats or worsening conditions. Do not include a headline that downgrades (lessens the impact of) a current condition in immediately subsequent forecast periods (e.g., "...STORM WARNING IN EFFECT IMPROVING TO GALE WARNING TONIGHT..."). If forecaster confidence is high, and based on customer demand, WFO's may include advisory/warning headlines in later periods. For example, in a Monday morning CWF issuance:

...GALE WARNING IN EFFECT...
...SMALL CRAFT ADVISORY CONDITIONS EXPECTED WEDNESDAY...

In a headline, the forecaster should include a general statement of the weather posing the threat, the time period covered, and, if necessary, the specific area impacted. Except for severe local storm watches, forecasters should not use specific times (e.g., GALE WARNING IN EFFECT AFTER 9AM).

a. Non-Tropical Cyclone Related Headlines. Forecasters should headline the following in the CWF, in the priority order given, if appropriate criteria are occurring or are forecast to occur.

1. Hurricane Force Wind Warning
2. Storm Warning
3. Gale Warning
4. Heavy Freezing Spray Warning
5. Tornado Watch
7. Severe Thunderstorm Watch

Based on event significance, forecasters may headline ADVISORY events expected to impact the forecast area, such as conditions impacting small craft, restrictions lowering visibilities below 1 NM, freezing spray, or volcanic ash fallout. In such cases, ADVISORY events will be prioritized between WARNING and WATCH events.

b. Tropical Cyclone Related Headlines. Once a tropical cyclone watch or warning has been issued which impacts a marine zone, replace existing headlines for that zone with applicable headlines specified in the latest tropical cyclone advisory. Headline the following in the priority order given:

1. Hurricane Warning
2. Tropical Storm Warning and Hurricane Watch
3. Tropical Storm Warning
4. Hurricane Watch
5. Tropical Storm Watch

As a tropical cyclone leaves an area, forecasters should headline watch and warning cancellations as issued by TPC, CPHC, or WFO Guam in the CWF. However, during this time, they should include in the synopsis a qualitative description of wind conditions (e.g., tropical storm force winds or gale force winds) in the wake of the tropical cyclone. Once the tropical cyclone is no longer impacting the marine zone, forecasters should again headline appropriate advisories or warnings not associated with the tropical cyclone.

When warranted due to an approaching or departing tropical cyclone, forecasters may append the phrase “SMALL CRAFT SHOULD REMAIN IN PORT” to the normal advisory headline. For example:

...TROPICAL STORM WARNING IN EFFECT...
...SMALL CRAFT SHOULD REMAIN IN PORT DUE TO HAZARDOUS WINDS....

c. Small Craft Advisories. Coastal WFOs will issue Small Craft Advisories when criteria are met for the first twelve (12) hour period, and may issue Advisories for the second period when forecaster confidence is high. In addition, WFOs, may include a headline in the Coastal Waters Forecast for expected conditions, beyond the second forecast period (for example, "SMALL CRAFT ADVISORY CONDITIONS ARE EXPECTED FRIDAY").

Based on Local or Regional policy, WFOs may use cautionary statements (e.g., SMALL CRAFT SHOULD EXERCISE CAUTION) in situations below SCA criteria.

d. Gale Warnings/Storm Warnings. Coastal WFOs will issue Warnings when criteria are met for the first twelve (12) hour period, and may issue Warnings for the second and/or third period when forecaster confidence is high. In addition, WFOs may include a headline in the Coastal Waters Forecast for expected conditions, beyond the second forecast period (for example, "GALE (or STORM) WARNING CONDITIONS EXPECTED MONDAY").

Note: Short duration (up to 2 hours) non-convective winds over water should be handled with a Small Craft Advisory (SCA), or Gale, Storm, or Hurricane Force Wind Warnings. There is no minimum wind duration requirement for SCA's or Gale/stronger warnings.

In situations where winds gust frequently above advisory/warning thresholds, forecasters should use discretion in issuing advisories or warnings, as appropriate, to alert customers and partners to hazardous marine conditions. Gusts occurring on a time-scale greater than 2 hours are considered frequent.

Refer to NWSI 10-301, Marine and Coastal Services Abbreviations and Definitions, for Regionally-defined small craft advisory issuance criteria, as well as definitions for gale or storm warnings.

2.3.6 1-3 Day Forecast Periods. Except as noted below, include forecasts of wind and sea state in each discrete forecast period of the CWF. Forecasters should also include forecasts of other weather significantly impacting the marine zone(s) (e.g., ice accretion, precipitation, wave periods, low visibilities, volcanic ash, ice crystals, ice fog, ice coverage, etc.). Always emphasize the most critical conditions.

Exception: The Regions may specify certain bays, inlets, harbors, inland waters, and estuaries for which sea state need not be included in forecasts if complexities in these areas (e.g., fetch, water depth, currents, etc.) make wave forecasts impractical. In these areas, forecasters may use general descriptions of sea conditions (e.g., rough, choppy, etc.).

2.3.7 4-5 Day Forecast Periods. Aside from the two exceptions noted below, always include wind and sea height information in each 24 hour period. Above that, forecasters should include only the more threatening weather conditions.

Exception 1: When a tropical cyclone threatens to impact a marine zone, indicate the possible tropical cyclone conditions, based on TPC, CPHC, WFO Guam, and/or Hydrometeorological Prediction Center (HPC) guidance, for the specific day(s) impacted. Because large positional and intensity errors are possible in these cases, forecasters should not give specific wind and sea values.

Example:

.FRIDAY...SOUTHEAST WINDS 25 KT INCREASING. SEAS 12 FT.
.SATURDAY...TROPICAL STORM CONDITIONS POSSIBLE.
.SUNDAY...HURRICANE CONDITIONS POSSIBLE.

Exception 2: For marine areas heavily influenced by topography, (e.g., Puget Sound, Southeast Alaska, and Chesapeake Bay), forecasters may give trend forecasts in lieu of specific wind and sea heights.

Example:

.TUESDAY AND WEDNESDAY...INCREASING EAST WINDS AND HIGHER SEAS ENHANCED BY A STRONG SOUTHEAST SWELL."

2.3.8 CWF - Forecast Parameters.

a. Winds. Winds represent predominant conditions 10 meters above the surface of the water. Forecasters should give direction to eight points of the compass. Avoid such phrases as "NORTH TO NORTHEAST WINDS". Forecasters should round speeds to the nearest 5 KT in forecasting specific wind speeds and ranges in wind speed.

In the CWF, include only sustained winds. However, where there are significant differences between sustained winds and peak gusts, forecasters should mention gusts (e.g., EAST WINDS TO 70 KTS WITH GUSTS TO 120 KTS).

Forecast changes in wind direction should be for changes of 45 degrees or more, and forecast changes in wind speed should be for changes of 10 knots or more. Locally smaller wind speed and/or direction changes may be established for small marine areas based upon customer needs. Speed transition terms such as "INCREASING" and "DECREASING" and direction transition terms such as "BECOMING" and "SHIFTING" should be used to add clarity to the forecast trends.

Where there is sufficient open water (ice-free seas) to include a sea state forecast, Small Craft Advisories will be issued when appropriate. If sea heights are omitted due to ice coverage, the

proper hazard type is Brisk Wind Advisory. The Brisk Wind Advisory should use the same regionally determined wind thresholds as the Small Craft Advisory.

b. Seas (or Combined Seas). Give sea state as a combined sea height or break it down into appropriate components (e.g., WIND WAVES 2 TO 4 FT, NORTHEAST SWELL 10 FT, or SEAS 12 FT). Whenever a SWELL is specified, include the direction from which the swell is propagating, to 8 points of the compass. Forecasters may only use descriptive words such as MODERATE or ROUGH in Regionally specified bays, inlets, harbors, estuaries, etc.

Transition terms such as "BUILDING" and "SUBSIDING" should be used to add clarity to forecast trends. Forecast changes in sea state should be meaningful (at least 3 feet in outer coastal waters and at least 2 feet in sheltered bays, inlets, etc.). Trends may be used to express more subtle changes, e.g., "SEAS 4 FT SUBSIDING WED AFTERNOON."

Sea state forecasts will be included for marine areas or portions of marine areas south or west of the ice edge. For other marine areas where a coverage of 7/10 or more of sea ice is expected, forecasts of sea state are usually omitted; however, if the area has at least 10% contiguous open water, sea state forecasts may be given. In these cases, use the phrase "SEAS IN ICE FREE WATERS".

Small craft advisories should be issued for sea state, even if the wind threshold is not met. Thresholds for a small craft advisory due to rough seas (and winds) are locally and regionally defined based upon expressed customer needs specific to the area.

c. Significant Weather/Visibility. When it is expected, forecasters should include significant weather posing a hazard to navigation (i.e., widespread fog or other restriction lowering visibilities to 1 NM or less, or thunderstorms). Based on forecaster discretion, and/or expected impact to customers, forecasters may include obstructions to visibility ranging between 1 ½ NM to 5 NM. Forecasters may use precipitation probability terms "CHANCE", "OCCASIONAL", etc., as defined in NWSI 10-503, and they may include specific visibility distances. However, do not use a qualitative description of visibility (e.g., VISIBILITY FAIR), and do not include sky cover.

d. Icing. The forecaster should include freezing spray in the body of the forecast whenever ice accretion on exposed surfaces is likely. When freezing spray is forecast to meet warning thresholds, a headline should also be included (e.g., ...HEAVY FREEZING SPRAY WARNING...).

e. Air Temperatures. Air temperatures are optional. However, they should only be included if they are forecast to be at or below freezing and if the forecaster considers this information to be significant.

Note: In support of the National Digital Forecast Database (NDFD), the following weather elements will be added to the list of CWF Forecast Parameters in the future: ice crystals, ice fog, freezing fog, volcanic ash, and an ice coverage weather element.

2.4 Format. The format of the CWF can be seen in Figure 1. For more detailed product format information consult NWSI 10-1701, *Text Product Formats and Codes*. This product is available in industry standard encoding and languages, and may include, but not limited to, American Standard Code for Information Interchange, Extensible Markup Language, Wireless Markup Language and HyperText Markup Language.

(WMO ID)(ISSUANCE DATE TIME)
(AWIPS ID)

COASTAL WATERS FORECAST
NATIONAL WEATHER SERVICE (CITY)(STATE)
(VALID TIME) AM/PM (LOCAL TIME ZONE)(DAY)(DATE)

(OVERALL AREA COVERED BY THIS FORECAST)

(SYNOPSIS UGC CODE)-(EXPIRATION TIME)-
(VALID TIME) AM/PM (LOCAL TIME ZONE)(DAY)(DATE)

.SYNOPSIS FOR (WFO MARINE AREA)...TEXT.

$$

(AREAL UGC CODE[S])-(EXPIRATION TIME)-
(FORECAST AREAL DESCRIPTOR[S])
(VALID TIME) AM/PM (LOCAL TIME ZONE)(DAY)(DATE)

...HEADLINE (If needed)...

.PERIOD 1...
.PERIOD 2...
.PERIOD 3...
.PERIOD 4...
.PERIOD 5...
.PERIOD 6 (Optional period for the morning issuance)...
.PERIOD 7 (Optional period for the afternoon issuance)..
.(DAY 4)...
.(DAY 5)...

$$
FORECASTER NAME (Optional)

Figure 1. Coastal Waters Forecast (CWF) Format

2.4.1 CWF - Unscheduled Forecasts. As needed, append either "...UPDATED" or "...CORRECTED" to the product header whenever, respectively, an unscheduled CWF is issued or when an error in the CWF is corrected. Add a short description of the updated or corrected items just below the areal header to highlight the change.

COASTAL WATERS FORECAST**...UPDATED (or ...CORRECTED)**
NATIONAL WEATHER SERVICE (CITY)(STATE)
(VALID TIME) AM/PM (LOCAL TIME ZONE)(DAY)(DATE)

(REASON FOR CORRECTED/UPDATED/AMENDED). [Optional]

(OVERALL AREA COVERED BY THIS FORECAST)

(SYNOPSIS UGC CODE)-(EXPIRATION TIME)-
(VALID TIME) AM/PM (LOCAL TIME ZONE)(DAY)(DATE)

.SYNOPSIS FOR (WFO MARINE AREA)...TEXT.

$$

Figure 2. Unscheduled Coastal Waters Forecast (CWF) Format

2.5 Updates, Amendments and Corrections. CWFs will be updated when the on-duty forecast team believes the current forecast is not representative, or when format or content errors are detected. WFOs will correct CWFs for format and grammatical errors.

In addition to normal update criteria noted in NWSI 10-303, forecasters should update CWFs when a tornado watch has been issued and severe thunderstorms are not in the forecast, or when a severe thunderstorm watch has been issued and thunderstorms are not in the forecast.

3. Surf Zone Forecast (product category SRF).

3.1 Mission Connection. The Surf Zone Forecast (SRF) provides valuable and life-saving information, pertaining to hazards in the surf zone, to the beachfront community, including the general public, and providers of beachfront safety services, such as lifeguards.

3.2 Issuance Guidelines.

3.2.1 Creation Software. WFOs may produce the SRF using the AWIPS text editor or any other text editor.

3.2.2 Issuance Criteria. The SRF does not have mandatory National issuance criteria. Issuance criteria will be determined by Regional policy, and customer and partner needs.

3.2.3 Issuance Time. Regional policy will govern the issuance of the SRF. Based on customer and partner needs and/or requirements, the SRF should be issued, at least, once per day. In addition, the SRF may be issued on a seasonal basis (e.g., Memorial Day through Labor Day).

3.2.4 Valid Time. Surf Zone Forecasts are valid from the time of issuance until the expiration time.

3.2.5 Universal Geographic Code (UGC). SRFs will contain land-based, areal UGC codes.

3.2.6 Product Expiration Time. The SRF product expiration time is not more than 24 hours from the initial issuance.

3.3 Technical Description. Surf Zone Forecasts will follow the format and content described in this section.

3.3.1 Mass News Disseminator Broadcast Line. None.

3.3.2 Mass News Disseminator Header. The Surf Zone Forecast MND Header is "SURF ZONE FORECAST".

3.3.3 Content. SRF content should be developed in coordination with local safety agencies who have responsibility for beachfront safety. NWS Regions and WFOs will determine the parameters to be included in the SRF, however the forecast may describe the following hazards of interest to the beachfront community: rip currents, lightning, severe thunderstorms, waterspouts, ultraviolet index; may include weather elements such as: sky condition, precipitation, visibility, air temperature, wind speed and direction; and may include surf elements such as: wave height, surf temperature, and tide information.

3.4 Format. The SRF is a segmented, free-form, text product and will comply with the requirements of NWSI 10-1701, Text Product Formats and Codes. A suggested product format follows. Two SRF examples are provided in Appendix A.

This product is available in industry standard encoding and languages, and may include, but not limited to, American Standard Code for Information Interchange, Extensible Markup Language, Wireless Markup Language and HyperText Markup Language.

Product Format	Description of Entry
FPaaii cccc ddhhmm	***WMO Heading***
SRFxxx	***AWIPS ID***
SURF ZONE FORECAST	***NWS Product Name***
NATIONAL WEATHER SERVICE CITY STATE	***Issuing Office***
time am/pm lt day mon dd yyyy	***Issuance Time/Date***
.FOR THE BEACHES of state...for day...	***Optional Statement***
stZXXX-XXX>XXX-ddhhmm-	***UGC Type(Zone)& Expir.Time***
county-county-county-county-	***County Names***
INCLUDING THE BEACHES OF city...city...city	***City Names***
time am lt day mon dd yyyy	***Issuance Time/Date***
...*Long-duration watch/warning(s) or significant headline(s) as required*...	
Hazards	***Optional parameters as***
Rip Current Risk...	***determined by Region/WFO***
Lightning Risk...	
Waterspout Risk...	
UV Index...	
Weather	
Sky Cover/Rain Chance...	
Air Temperature...	
Wind Speed/Direction...	
Surf	
Wave Height...	
Surf Temperature...	
Approximate Times for Tides...	
$$	***This code ends zone segment***
stZXXX-XXX>XXX-ddhhmm-	***UGC Type(Zone)& Expir.Time***
county-county-county-county-	***County Names***
INCLUDING THE BEACHES OF city...city...city	***City Names***
time am lt day mon dd yyyy	***Issuance Time/Date***
...*Long-duration watch/warning(s) or significant headline(s) as required*...	
Hazards	***Optional parameters as***
Rip Current Outlook...	***determined by Region/WFO***
Lightning Risk...	
Waterspout Risk...	
UV Index...	

```
Weather
Sky Cover/Rain Chance...
Air Temperature...
Wind Speed/Direction...

Surf
Wave Height...
Surf Temperature...
Approximate Times for Tides...

$$                                          This code ends zone segment

FORECASTER ID                               Optional

All times are local.
```

Figure 3. Surf Zone Forecast (SRF) Format

3.5 Relationships between the SRF and other WFO products

3.5.1 Advisories or Warnings. Forecasters will not use SRFs to issue Advisories or Warnings. For example, High Surf Advisories should be issued using Coastal Flood Statements/Watches/Warnings (NWSI 10-320). However, current or expected High Surf Advisories may be referenced within the SRF, as this would interest the beachfront community.

3.5.2 Coastal Flood Statements/Watches/Warnings (product category CFW). Current or expected issuance of Coastal Flood Products should be referenced within the SRF, as this would interest the beachfront community.

3.5.3 Hazardous Weather Outlook (product category HWO). WFOs forecasting a Moderate or High Risk of Rip Currents in the first or second forecast periods will include this information in the Day 1 Marine/Surf portion of the Hazardous Weather Outlook product (HWO). See NWSI 10-517, Multi-purpose Weather Products Specification.

3.5.4 Hurricane Local Statements (product category HLS). When WFOs begin to issue HLSs (NWSI 10-601), the next scheduled SRF will contain only the tropical cyclone headlines and refer users to the HLS, with a statement such as:

"The regularly scheduled SRF will be discontinued as long as tropical cyclone watches and warnings are in effect for the County Warning Area (CWA). Refer to the HLS for the latest watches and warnings in the CWA. The SRF will resume in its normal format after tropical cyclone watches and warnings are discontinued for the CWA."

Key information normally carried in the SRF, such as surf height and Rip Currents, should be included in the HLS.

3.6 Rip Currents. A Rip Current is a relatively small-scale, surf-zone current moving away from the beach. Rip Currents form as waves disperse along the beach causing water to become trapped between the beach and a sand bar or other underwater structure. Eventually the water converges into a narrow, river-like channel moving away from the shore. Rip Currents may become life-threatening to swimmers under certain combinations of beach shape, bathymetry, tidal action, wind, and wave conditions. Rip Currents are often located in the vicinity of groins, jetties, and piers, but can occur anywhere in the surf zone.

If a WFO does not issue the SRF, rip current information may be included within the High Surf Advisory (using the CFW product). This rip current information will be provided using one of the three-tiered text qualifiers specified in Section 3.6.1

WFOs and Regions will decide if sufficient guidance, observational evidence, and forecaster proficiency is available for providing customers with information about Rip Currents.

The SRF is the primary product for providing Rip Current information. That is, if a WFO routinely provides Rip Current information, the WFO must be issuing the SRF. Rip Current information in the SRF will be introduced using the phrase "Rip Current Outlook". Rip current information may also be provided in the Hazardous Weather Outlook (see section 3.5.3).

3.6.1 Three-Tiered Qualifiers. Rip Current Outlooks in the SRF will use the following, 3-tiered text qualifiers. WFOs should include the following definitions in their rip current associated text products:

Low Risk. Wind and/or wave conditions are not expected to support the development of Rip Currents. However, Rip Currents can sometimes occur, especially in the vicinity of groins, jetties, and piers. Know how to swim and heed the advice of the beach patrol.

Moderate Risk. Wind and/or wave conditions support stronger or more frequent Rip Currents. Only experienced surf swimmers should enter the water.

High Risk. Wind and/or wave conditions support dangerous Rip Currents. Rip Currents are life-threatening to anyone entering the surf.

3.6.2 Moderate or High Risk. WFOs forecasting a Moderate or High Risk of Rip Currents will headline this information in the SRF. To ensure maximum notification to customers, WFOs forecasting a Moderate or High Risk of Rip Currents will include this information in the Day 1 portion of the Hazardous Weather Outlook product (HWO).

Local safety officials responsible for beachfront safety may have jurisdiction to issue Rip Current Alerts. The NWS does not, on its own, issue Rip Current Alerts. Rip Current Alerts should be

included in NOAA Weather Radio (NWR) programming. In any NWS forecast or NWS broadcast containing such an alert, the NWS will reference the local agency issuing the alert. WFOs are encouraged to collaborate closely with their local beachfront safety officials. The safety officials can help pass on NWS Rip Current information to the public, and also relay Rip Current observations back to the WFO.

3.7 Updates, Amendments and Corrections. SRFs will be updated when forecast conditions change significantly, especially when hazardous conditions arise. WFOs will correct SRFs for format and grammatical errors.

APPENDIX A - Examples of Coastal NWS Forecasts

Table of Contents:

1. Coastal Waters Forecasts A-1

2. Surf Zone Forecasts A-4

1. Coastal Waters Forecasts

FZUS56 KEKA 160959
CWFEKA

NORTHWEST CALIFORNIA COASTAL WATERS FORECAST
NATIONAL WEATHER SERVICE EUREKA CA
300 AM PDT WED APR 16 2003

POINT ST GEORGE TO POINT ARENA AND OUT 60 NM

PZZ400-161600-
300 AM PDT WED APR 16 2003

.SYNOPSIS FOR NORTHERN CALIFORNIA WATERS...LOW PRES OFFSHORE WILL MOVE SLOWLY INLAND TODAY INTO TONIGHT. HIGH PRES WILL BUILD FROM THE W THU AND FRI. A WARM FRONT WILL APPROACH FROM THE S ON SAT. A COLD FRONT WILL CROSS NORTHERN CALIFORNIA ON SUNDAY.

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PZZ450-470-161600-
PT. ST. GEORGE TO CAPE MENDOCINO 20 TO 60 NM-
PT. ST. GEORGE TO CAPE MENDOCINO OUT 20 NM-
300 AM PDT WED APR 16 2003

.TODAY...SE WIND 5 TO 15 KT. WIND WAVES 2 FT OR LESS. W SWELL 6 TO 7 FT AT 10 SECONDS. SCATTERED MORNING SHOWERS.
.TONIGHT...N WIND 5 TO 15 KT. WIND WAVES 1 TO 3 FT. W SWELL 8 FT AT 10 SECONDS. CHANCE OF SHOWERS.
.THU...NW WIND 10 TO 15 KT. WIND WAVES 3 FT. NW SWELL 7 FT AT 10 SECONDS. CHANCE OF SHOWERS.
.THU NIGHT...NW WIND 10 TO 15 KT. WIND WAVES 2 FT. NW SWELL 6 TO 7 FT. CHANCE OF SHOWERS.

.FRI...W WIND 10 TO 15 KT. WIND WAVES 2 FT. NW SWELL 6 TO 7 FT.
CHANCE OF SHOWERS.
.SAT...W WIND 10 KT. WIND WAVES 2 FT. NW SWELL 9 FT BUILDING TO 12
FT.
.SUN...NW WIND 15 KT. WIND WAVES 3 FT. NW SWELL 13 TO 14 FT.

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PZZ455-475-161600-
CAPE MENDOCINO TO PT. ARENA 20 TO 60 NM-
CAPE MENDOCINO TO PT. ARENA OUT 20 NM-
300 AM PDT WED APR 16 2003

.TODAY...S WIND 5 TO 15 KT. WIND WAVES 1 TO 3 FT. W SWELL 6 TO 7 FT
AT 10 SECONDS. ISOLATED MORNING SHOWERS.
.TONIGHT...N WIND 5 TO 15 KT. WIND WAVES 1 TO 3 FT. NW SWELL 7 TO 9
FT AT 10 SECONDS. CHANCE OF SHOWERS.
.THU...NW WIND 15 TO 20 KT...WITH GUSTS TO 25 KT LATE. WIND WAVES 3
TO 5 FT. NW SWELL 6 TO 8 FT AT 10 SECONDS. CHANCE OF SHOWERS.
.THU NIGHT...NW WIND 15 TO 20 KT...WITH GUSTS TO 25 KT. WIND WAVES 3
TO 5 FT. NW SWELL 5 TO 7 FT. CHANCE OF SHOWERS.
.FRI...NW WIND 10 TO 15 KT. WIND WAVES 2 TO 3 FT. NW SWELL 6 TO 7 FT.
.SAT...NW WIND 10 TO 20 KT. WIND WAVES 3 TO 4 FT. NW SWELL 7 FT
BUILDING TO 10 TO 11 FT LATE.
.SUN...NW WIND 15 TO 20 KT. WIND WAVES 4 TO 5 FT. NW SWELL 12 TO 13
FT.

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LENZ

FZUS54 KCRP 190909
CWFCRP

COASTAL WATERS FORECAST
NATIONAL WEATHER SERVICE CORPUS CHRISTI TX
430 AM CDT MON MAY 19 2003

MIDDLE TEXAS COASTAL WATERS FROM BAFFIN BAY TO MATAGORDA SHIP
CHANNEL OUT TO 60 NAUTICAL MILES.

IMPORTANT NOTICE TO MARINERS...MARINE FORECASTS ARE ISSUED AT LEAST
FOUR TIMES A DAY. BOATERS ON EXTENDED TRIPS SHOULD ROUTINELY
MONITOR SUBSEQUENT FORECAST ISSUANCES AND UPDATES FOR THE LATEST
MARINE WEATHER INFORMATION.

GMZ200-191530-
430 AM CDT MON MAY 19 2003

.SYNOPSIS FOR BAFFIN BAY TO MATAGORDA SHIP CHANNEL OUT 60 NM...LOW PRESSURE OVER WEST TEXAS WILL MAINTAIN A WEAK TO MODERATE ONSHORE FLOW TODAY THROUGH TUESDAY. A COLD FRONT WILL APPROACH THE COASTAL WATERS ON WEDNESDAY THEN STALL OVER THE WATERS. THIS WILL PROVIDE A SLIGHT CHANCE FOR PRECIPITATION THROUGH FRIDAY. HIGH PRESSURE WILL BUILD ALOFT AND DRIER AIR WILL MOVE INTO THE AREA... PRECLUDING THE CHANCE FOR PRECIPITATION.

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GMZ230-235-191530-
BAYS AND WATERWAYS FROM BAFFIN BAY TO PORT ARANSAS-
BAYS AND WATERWAYS FROM PORT ARANSAS TO PORT O'CONNOR-
430 AM CDT MON MAY 19 2003

.TODAY...SOUTH WIND 10 TO 15 KNOTS...BECOMING SOUTHEAST. BAYS SLIGHTLY CHOPPY TO OCCASIONALLY CHOPPY. AREAS OF FOG IN THE MORNING FOLLOWED BY AREAS OF HAZE IN THE AFTERNOON.
.TONIGHT...SOUTHEAST WIND 10 TO 15 KNOTS. BAYS SLIGHTLY CHOPPY TO OCCASIONALLY CHOPPY. AREAS OF FOG OVERNIGHT.
.TUESDAY...SOUTHEAST WIND 5 TO 10 KNOTS...INCREASING TO 10 TO 15 KNOTS. BAYS SLIGHTLY CHOPPY TO OCCASIONALLY CHOPPY. AREAS OF FOG IN THE MORNING.
.TUESDAY NIGHT...EAST WIND 10 TO 15 KNOTS...BECOMING NORTHEAST AND DECREASING TO 5 TO 10 KNOTS. BAYS SLIGHTLY CHOPPY TO OCCASIONALLY CHOPPY. SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS.
.WEDNESDAY...NORTHEAST WIND 10 TO 15 KNOTS. BAYS SLIGHTLY CHOPPY TO OCCASIONALLY CHOPPY. CHANCE OF SHOWERS AND THUNDERSTORMS.
.THURSDAY...NORTHEAST WIND INCREASING TO 10 TO 15 KNOTS. BAYS SLIGHTLY CHOPPY TO OCCASIONALLY CHOPPY. CHANCE OF SHOWERS AND THUNDERSTORMS.
.FRIDAY...NORTHEAST WIND 10 TO 15 KNOTS. BAYS SLIGHTLY CHOPPY TO OCCASIONALLY CHOPPY. SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS.

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GMZ250-255-270-275-191530-
COASTAL WATERS BAFFIN BAY TO PORT ARANSAS OUT 20 NM-
COASTAL WATERS PORT ARANSAS TO MATAGORDA SHIP CHANNEL OUT 20 NM-
WATERS BAFFIN BAY TO PORT ARANSAS 20 TO 60 NM-

WATERS PORT ARANSAS TO MATAGORDA SHIP CHANNEL 20 TO 60 NM-
430 AM CDT MON MAY 19 2003

.TODAY...SOUTHEAST WIND 10 TO 15 KNOTS. SEAS 3 TO 4 FEET. AREAS OF HAZE.
.TONIGHT...SOUTHEAST WIND 10 TO 15 KNOTS. SEAS 3 FEET.
.TUESDAY...SOUTHEAST WIND 5 TO 10 KNOTS. SEAS 3 TO 4 FEET.
.TUESDAY NIGHT...EAST WIND 5 TO 10 KNOTS...BECOMING NORTHEAST. SEAS 2 TO 4 FEET. SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS.
.WEDNESDAY...NORTHEAST WIND 10 TO 15 KNOTS. SEAS 3 TO 5 FEET. CHANCE OF SHOWERS AND THUNDERSTORMS.
.THURSDAY...NORTHEAST WIND 10 TO 15 KNOTS. SEAS 3 TO 5 FEET. CHANCE OF SHOWERS AND THUNDERSTORMS.
.FRIDAY...NORTHEAST WIND 10 TO 15 KNOTS. SEAS 3 TO 5 FEET. SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS.

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2. Surf Zone Forecasts:

FZUS52 KILM 152100
RDUSRFILM

SURF ZONE FORECAST
NATIONAL WEATHER SERVICE WILMINGTON NC
500 PM EDT WED AUG 15 2003

.FOR THE BEACHES OF SOUTHEAST NORTH CAROLINA AND NORTHEAST SOUTH CAROLINA FOR THURSDAY...

NCZ097-101-161000-
PENDER-NEW HANOVER-
INCLUDING THE BEACHES OF SURF CITY...TOPSAIL BEACH...WRIGHTSVILLE BEACH... CAROLINA BEACH...KURE BEACH...FORT FISHER
500 PM EDT WED AUG 15 2003

...HIGH RISK OF RIP CURRENTS THURSDAY...

HAZARDS
RIP CURRENT OUTLOOK... HIGH THURSDAY MORNING. A HIGH RISK OF RIP CURRENTS MEANS WIND AND/OR WAVE CONDITIONS SUPPORT THE DEVELOPMENT OF DANGEROUS RIP CURRENTS. RIP CURRENTS ARE

	LIFE-THREATENING TO ANYONE WHO ENTERS THE SURF.
LIGHTNING RISK...	LOW ALL DAY
WATERSPOUT RISK...	LOW ALL DAY
UV INDEX...	HIGH FROM 10 AM TO 2 PM

WEATHER

SKY/WEATHER...	SUNNY SKIES IN THE MORNING...BECOMING PARTLY CLOUDY WITH AN ISOLATED SHOWER POSSIBLE IN THE AFTERNOON.
AIR TEMPERATURE...	70 TO 75 MORNING AND 80 TO 85 AFTERNOON
WIND...	SOUTH 10 MPH IN THE MORNING BECOMING SOUTHEAST AT 15 MPH.

SURF...

WAVE HEIGHT	BREAKERS WILL AVERAGE 6 TO 8 FT.
SURF TEMPERATURE	80 TO 82 F
TIDES FOR THU	LOW 400 AM...HIGH 1030 AM...LOW 445 PM...HIGH 1045 PM

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NCZ100-SCZ034-046-161000-
BRUNSWICK-HORRY-GEORGETOWN-
INCLUDING THE BEACHES OF OAK ISLAND...HOLDEN BEACH...OCEAN ISLE BEACH...LITTLE RIVER...NORTH MYRTLE BEACH...MYRTLE BEACH...SURFSIDE BEACH...GARDEN CITY... MURRELLS INLET...LITCHFIELD...PAWLEYS ISLAND
500 PM EDT WED AUG 15 2003

...MODERATE RISK OF RIP CURRENTS THURSDAY...

HAZARDS

RIP CURRENT OUTLOOK...	MODERATE THURSDAY MORNING. A MODERATE RISK OF RIP CURRENTS MEANS WIND AND/OR WAVE CONDITIONS SUPPORT STRONGER OR MORE FREQUENT RIP CURRENTS. ONLY EXPERIENCED SURF SWIMMERS SHOULD ENTER THE WATER.
LIGHTNING RISK...	LOW ALL DAY
WATERSPOUT RISK...	LOW ALL DAY
UV INDEX...	HIGH FROM 10 AM TO 2 PM

WEATHER

SKY/WEATHER...	SUNNY SKIES IN THE MORNING...BECOMING PARTLY CLOUDY DURING THE AFTERNOON.

AIR TEMPERATURE...	70 TO 75 MORNING AND 80 AFTERNOON
WIND...	SOUTH 10 MPH IN THE MORNING BECOMING SOUTHEAST 15 TO 20 MPH.
SURF	
WAVE HEIGHT...	BREAKERS WILL AVERAGE 6 TO 8 FT.
SURF TEMPERATURE...	82 TO 84 F
TIDES FOR THU...	LOW 415 AM...HIGH 1045 AM...LOW 500 PM...HIGH 1100 PM

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PFAFF

FZUS52 KCHS 152020
RDUSRFCHS

SURF ZONE FORECAST
NATIONAL WEATHER SERVICE CHARLESTON SC
320 PM EST TUE MAR 25 2003

.FOR THE BEACHES FROM CHARLESTON TO SAVANNAH.

GAZ119-SCZ048-050-251030-
COASTAL CHATHAM-BEAUFORT-CHARLESTON

TUESDAY WILL BE MOSTLY SUNNY...WITH HIGH TEMPERATURES IN THE LOWER 70S. LIGHT NORTH WINDS IN THE MORNING WILL BECOME SOUTHEAST AT 10 MPH.

EXPECT PARTLY CLOUDY SKIES ON WEDNESDAY. HIGHS 65 TO 70. WINDS WILL BE SOUTH AROUND 15 MPH.

THE FORECAST UV INDEX FOR TUESDAY IS 7...IN THE HIGH CATEGORY.

SEAWATER TEMPERATURES ARE IN THE MIDDLE 60S.

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